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EXAMINER

HUYNH, SON P

ART UNIT	PAPER NUMBER
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2623

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/547,474

Applicant(s)

SANDERS, MARK

Examiner

Son P. Huynh

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 8-17, 19-37, 39-50, 54-63 and 66-87 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-17, 19-37, 39-50, 54-63 and 66-87 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/16/2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to amended claims 1-5, 8-17, 19-37, 39-50, 54-63, 66-83 and new added claims 84-87 have been considered but are moot in view of the new ground(s) of rejection.

Claims 6-7, 18, 38, 51-53, 64-65 have been canceled.

Claim Rejections - 35 USC § 101

Art Unit: 2623

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 34-37, 39-50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 34-37, 39-50 recites "a program storage media storing computer executable instruction operable to cause ..."are directed to non-statutory subject matter. Pages 52-53 of Interim guideline states "a claimed computer-readable medium encoded with a...., and is thus statutory". The data structures of "a program storage media...." does not define any structural relationships between the data structure and other claimed elements of a computer which permit the data structure's functionality to be realized, and is thus statutory.

In claims 34-37, 39-50, lines 1-2, the limitation "a program storage media storing computer executable instructions operable to cause data processing apparatus to execute the process" should be replaced as – a computer readable medium" encoded with computer executable instructions being executed by data processing apparatus to execute the process ---

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 4-5, 9-17, 19, 30-34, 36-37, 40-46, 54-57, 59-61, 63, 67-68, 70-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon et al. (US 5,920,700).

Regarding claim 1, Gordon discloses a process of propagating viewing assets to a system of video servers (head ends, hubs, etc. with storage devices –figures 2-8), the process comprising:

generating a propagation priority for a selected viewing asset that represents a predicted economic value of propagation the selected viewing asset to a target video server (generating a priority for transmit for a copy of asset that represents a predicted economic value i.e. high demand for the asset, to be transmitted to the storage device at particular head end or hubs – figure 2, col. 5, line 41-col. 6, line 55, col. 7, lines 27-67, for example, predicted economic value for unused asset is low since no one demand for it), the propagation priority comprising a first priority associated with the viewing asset (interpreted as propagation the copy viewing asset to the target storage

Art Unit: 2623

device based on type of asset, release date, version, source ID, etc. – see including, but is not limited to, col. 7, line 26-col. 8, line 40) a second priority associated with the target video server (interpreted as providing asset to target storage device based on user demand at particular storage device/location, available storage space of each storage device, availability of bandwidth for asset transfer between devices, etc. – see including, but is not limited to, col. 3, lines 43-67; col. 5, lines 41-63; col. 7, line 27-col. 9, line 42);

Gordon further discloses metadata of the asset comprises expiration date, license termination date, information that indicate the asset is unused or overused etc. (col. 5, lines 45-62; col. 6, lines 40-50; col. 7, lines 10-15; col. 8, lines 18-67). Inherently, a retention value (i.e. associated with the expiration time, overused asset, unused asset, asset's useful life, etc.) is generated for one or more viewing assets presently stored on the target video server (storage device), each retention value representing a predicted economic value of retaining a replica of a corresponding viewing asset on the target video server so that the unused assets, or asset with expired date, stored in the storage device is deleted – see 7, lines 10-15; col. 8, line 41-60).

Gordon also discloses the management system queries a usage manager blocks to determine the population of unused or overused asset in accordance with previously determined limits, determines whether to potentially copy an asset to a particular location or delete an asset from a particular location (for example, deleting recorded unused asset and/or assets with expired date in the storage device and added/copy the overused asset/potentially high demand assets to the storage) – see include, but is not

Art Unit: 2623

limited to, col. 5, line 40-col. 6, line 65). Even though Gordon does not explicitly discloses comparing priority of the selected viewing asset against a sum of one or more retention value corresponding to a set of the one or more viewing asset stored on the target video server, it is obvious to one of ordinary skill in the art that the propagation priority of the selected viewing asset is compared against a sum of one or more retention values corresponding to a set of the one or more viewing assets stored on the target video server (for example, the propagation/transmission priority of overused asset, new assets, or potentially high demand asset is compared to the retention value of unused asset, expired date asset stored in the storage device at particular local video server so that the expired date/unused assets is deleted (since these asset has low retention value) and the overused/new/potential high demand assets is added into the storage of the particular server in order to improve efficiency of storage space utilization. Further, the sum of retention value could be interpreted as the value plus zero.

Gordon additionally discloses in addition to removing the unused assets, or assets with expired date, the usage manager can copy popular asset to the storage device, the assets are copied in order based on popularity (i.e., most used assets are copied first) and based on utilization bandwidth (col. 8, line 61-col. 9, line 42). Thus, a missing portion of a replica of the selected viewing asset (asset that is not stored/or asset does not have enough copies in the storage device) is inherently copied to the target video server (storage device) in response to determining that the propagation priority of the selected viewing asset exceeds the sum of one or more retention values

Art Unit: 2623

(for example, propagation priority of the new/popular asset exceeds the retention value of the unused asset/expired asset stored in video server) so that the unused asset or asset with expired date are deleted and the overused/potentially high demand assets are added into the storage of the server.

Regarding claim 2, Gordon further discloses copying a missing portion comprising writing the missing portion of the replica of the selected asset onto a storage region of the target video server on which is already stored a replica of one or more viewing assets (writing a copy of new/popular assets into the storage device that stored unused asset or another copy of the asset (see including, but are not limited to, col. 8, line 41-col. 9, line 43)).

Regarding claim 4, Gordon further discloses copying of the missing portion of the replica of the selected includes the copying the missing portion from one or more video servers (e.g. copying new/popular asset from storage device located in Orlando Florida to storage devices in New York, Denver, Chicago, Los Angeles, etc. -col. 3, lines 20-37).

Regarding claim 5, Gordon further discloses assigning priority for asset to be copied to the storage device such as most used assets are copy first, news files take priority over movies between 6:00 P.M and 7:30 P.M (col. 7, lines 27-67; col. 8, line 61-col. 9, line 13). Thus, the process inherently comprising:

assigning propagation priorities to a plurality viewing assets (i.e. news files is assigned higher priority than movie files between 6:00 pm to 7:30 pm, or most used asset has highest priority);

ranking the viewing assets according to the assigned priority (queue assets to be copied – col. 8, line 65-col. 9, line 12); and

selecting an asset in response to the asset having a rank higher than a preselected minimum rank (i.e. most used assets are copied first).

Regarding claim 9, Gordon further discloses all registries are updated to reflect the new copy and its location, deleted copies, etc. (col. 6, lines 25-65; col. 7, lines 17-25). As a result, retention values of replicas of viewing assets remaining on the target server are updated in response to the copy of the missing portion (i.e. new copy) of the replica of the selected viewing asset.

Regarding claim 10, Gordon further discloses selecting the viewing assets to include video files for at least one of the movies, news emissions, and shopping emission (col. 1, lines 14-25; col. 7, lines 32-67).

Regarding claim 11, Gordon further discloses the links between one asset and any other asset or sets of assets and application which in use the asset. when the scheduling manager processes a file deletion request, operations 138B determines whether there are any preexisting links to this asset which remain in use (col. 6, line 56-

Art Unit: 2623

col. 7, line 15). Thus, the replica of one or more viewing assets inherently includes a replica of an asset element shared by replicas of two sets on the target server so that the assets are linked to each other.

Regarding claim 12, the limitations of a process that corresponding to the limitations of process as claimed in claims 1 and 5, and are analyzed as discussed with respect to the rejection of claims 1 and 5; the additional limitation of "wherein the second priority is calculated based on replicas available to the target video server, load on the target video server, ..., or any combination thereof" is met by Gordon disclosure that the management system provide asset to target storage device based on user demand at particular storage device/location, available storage space of each storage device, or availability of bandwidth for asset transfer between devices, etc. – see including, but is not limited to, col. 3, lines 43-67; col. 5, lines 41-63; col. 7, line 27-col. 9, line 42);

Gordon also discloses the assets can be distributed to several other locations. For example, a location in Orlando, Fla. may simultaneously stream assets to locations in New York, Chicago, Los Angeles (col. 3, lines 20-32) and the reporting manger may indicate that user demand is trending for other types of assets during these hours in different portion of the system and therefore, priority shifts in different areas of the network served by the operation centers may be appropriate (see include, but is not limited to, col. 7, lines 15-col. 9, line 42). It would have been obvious to one of ordinary skill in the art that the viewing assets is propagated/distributed to zero or more of the video server according to rank (for example, the management system uses priority

Art Unit: 2623

shifts in different areas of the network to provide popular assets to several servers in different areas) in order to improve efficiency in data transmission.

Regarding claim 13, Gordon further discloses assigning, a viewing asset to a usage class (i.e., news, movies, poster, etc. – col. 7, lines 30-65; col. 9, lines 30-42), the usage class providing a portion of an initial value for propagation priorities associated with assets assigned to the class (e.g. news has higher priority of transmission during particular time period, see col. 7, lines 30-65, col. 9, lines 30-42).

Regarding claim 14, Gordon further discloses accumulating usage data on individual assets stored on the video servers; and updating the propagation priorities based on the usage data (usage manager keep tracks of usage of asset and used the usage data to copy the asset i.e., most used assets are copied first – col. 8, line 40-col. 9, line 13)

Regarding claim 15, Gordon further discloses the digital assets include a variety of different types of content such as compressed video files (i.e., MPEG-2 compression), compressed audio files (col. 1, lines 14-25, lines 60-68, col. 4, lines 40-47). Inherently, the viewing assets include encoded digital video assets.

Regarding claim 16, Gordon further discloses the usage data included data indicative of viewer demand (e.g., how many times a particular asset is accessed and during what

Art Unit: 2623

time) and data indicate of change in viewer demand (indicative of unused asset) – see col. 8, lines 41-60).

Regarding claim 17, Gordon further updating the propagation priority of a particular asset in a usage class based on a difference between a usage level of the usage class and a usage level of the particular asset determined from the accumulated usage data (e.g. the propagation priority of particular asset (i.e. earthquake or other asset of news) in news class is updated based on the difference between usage level of news and a usage level of particular asset (earthquake) determined from the accumulated usage data (col. 7, line 52-col. 8, line 4).

Regarding claim 19, Gordon further discloses streaming a replica of the copied one of the assets from the particular video server to a television of a viewer in response to receiving a request to deliver the asset (providing a copied asset stored in storage device at head ends or hubs to a television (26) for display in response to user request for the asset – figure 2, col. 4, lines 48-67).

Regarding claim 30, the limitations of the system that correspond to the limitations of the processed as claimed in claim 1 are analyzed as discussed with respect to the rejection of claim 1. Gordon further discloses communication channel between operations centers, headends, hubs, end users (figure 2) is read on the claimed

Art Unit: 2623

communication channel; the managers for controlling the copying between the headends, hubs (figures 2-8) is read on the claimed "control unit..."

Gordon also discloses adding new/potential high demand/overused asset to the system and deleting unused/expired date asset from the system (see include, but is not limited to, col. 3, lines 42-67; col. 5, line 40-col. 6, line 65) and selecting most used assets to provide to the particular server (col. 7, line 1-col. 9, line 42). It would have been obvious to one of ordinary skill in the art that the first economic value (e.g. economic value of most used asset, potential high demand asset, new asset, is compared against a second economic value of retaining a replica asset already stored on the target server (e.g. economic value of unused/expired asset stored on storage device of particular location) and determining that the first economic value of propagating the selected viewing asset exceed the second economic value of retaining the replica of the viewing asset on the target server (e.g. determining economic value of potential high demand asset is higher than economic value of retaining unused/expired asset on the storage of particular location) so that the unused/expired asset is deleted and overused/potentially high demand asset is added into the storage device at particular location in order to improve efficiency of data distribution, and maximize memory utilization at the storage device.

Regarding claim 31, Gordon further discloses the control unit is configured to record usage data for the assets stored on each of the local video storage (usage manager

Art Unit: 2623

records usage data for assets stored on each of the local storage device – col. 8, lines 41-67).

Regarding claim 32, Gordon further discloses a plurality of distribution networks (networks that connect between headends/hubs to end users – figures 2-8) to provide channels for delivering viewing assets to viewer televisions, each distribution network connected to a subset of the video server (each network connected to a local server/hub/headend – figure 2).

Regarding claim 33, Gordon further discloses the control unit is configured to accumulate usage data on viewing assets from the video server (figures 3-8; col. 8, lines 41-67).

Regarding claims 34, 36-37, 40-46, the limitations as claimed are directed toward embodying the process of claims 1, 4-5, 9, 12-14, 16-19 respectively in “program storage media storing executable instructions”. It is obvious to one of ordinary skill in the art to embody the procedures discussed in claims 1, 4-5, 9, 12-19 in order that the instructions could be automatically performed by a processor.

Regarding claim 54, Gordon further discloses the usage manager keeps track of how many times a particular assets has been accessed, the usage information is used for propagating of the assets such as most used assets are copied first (col. 8, line 41-col.

Art Unit: 2623

9, line 43). Thus, the first priority is inherently based in part of a counter value, the counter value measuring usage of the selected one of the assets (propagation priority comprises priority based on usage level/popularity of particular assets which include how many times a particular assets has been accessed) so that the distribution priority is based on usage level/number of times a particular assets has been accessed.

Regarding claim 55, Gordon further discloses the second priority is based in part on a bandwidth for streaming the selected one of the assets from the one of the video servers to a set of viewers (available bandwidth of the particular networks that connected to a set of viewers – col. 5, lines 40-62; col. 9, lines 1-43).

Regarding claims 56-57, 61, 67-68, the limitations as claimed correspond to the limitations as claimed in claims 1-2, 5, 9-10, and are analyzed as discussed with respect to the rejection of claims 1-2, 5, 9-10.

Regarding claims 59-60, the limitations as claimed correspond to the limitations as claimed in claim 4, and are analyzed as discussed with respect to the rejection of claims 4, wherein the storage device in claim 59 is interpreted as storage device at video server as claimed in claim 4.

Art Unit: 2623

Regarding claim 63, Gordon further discloses selecting a target device (storage device to be a target video asset device at particular location – col. 5, lines 41-63; col. 6, lines 25-35; col. 7, line 52-col. 8, line 5).

Regarding claims 70-73, the limitations as claimed correspond to the limitations as claimed in claims 12-15 and are analyzed as discussed with respect to the rejection of claims 12- 15.

Regarding claim 74, Gordon further discloses providing viewing assets to storage device based on popularity/user demand of the assets, available space of the storage device, bandwidth capability of the network connected to the storage device, etc., the storage device stores the assets during the asset's useful life (col. 4, lines 60-67; col. 5, lines 40-62, col. 6, lines 5-50, col. 7, lines 18-col. 9, line 43). It is obvious that the retention value comprises a first value associated with the viewing asset and indicative of an economic value of retaining a set of replicas of the viewing asset on the video server (for example, value associated with usage/popularity of the asset); a second value associated with the target video server and indicative of an economic value of retaining the set of replicas on the target video server (for example, value associated with economic value for storing/retaining the asset at the storage device during or after asset's useful life) in order to maximize utilization of particular asset at particular location, thereby improve of revenue for the asset.

Art Unit: 2623

Regarding claim 75, Gordon discloses the providing the asset to storage device based on usage information such as copying the most used asset first (col. 8, line 41-col. 9, line 11). Inherently, the first priority is calculated based on first component associated with a user demand (usage information) for the selected asset.

Regarding claim 76, Gordon further discloses the first component comprise short term viewer demand (e.g. in hours), medium term viewer demand (e.g. in weeks), total number of requests (how many times a particular assets has been accessed), usage class data (movie, poster, news, etc.), or any combination thereof (col. 8, lines 41-60).

Regarding claim 77, Gordon further discloses the component is associated with a coefficient indicative of an important associated with the particular first component (e.g. movie with weighting factor of 1.0, poster with weighting factor of 0.1 – col. 9, lines 1-43).

Regarding claim 78 and 82, Gordon discloses a process as discussed in the rejection of claim 78 and 81. However, Gordon does not specifically disclose the coefficient associated with the component can be configured by a user. Official Notice is taken that the user configures coefficient associated with component is well known in the art. For example, the user input coefficient indicative of a weight associated with particular item/genre such as movie/item is selected as “strong like”, “like”, “dislike” or a ranking/rating number of interest. Therefore, it would have been obvious to one of

Art Unit: 2623

ordinary skill in the art at the time the invention was made to modify Gordon to use the well-known teaching in the art in order to allow user to explicitly input the level of interest therefore improve efficiency in targeting data to user.

Regarding claim 79, Gordon further discloses the second priority is calculated based on second component associated with a local environment of the target video server (i.e., user demand at particular headend/hub that comprises storage device, available space of storage device of particular headend/hub, bandwidth available of the network connected to particular headend/hub, etc. – col. 3, lines 20-67; col. 5, lines 45-62; col. 7, line 16-col. 8, line 4; col. 9, lines 1-42).

Regarding claim 80, Gordon further discloses the second component comprises asset classification (i.e. news, poster, movie, etc.), number of replicas available to the target video server, number of replicas stored on the target video server, available delivery paths to stream the selected assets to users, available bandwidth between target video server and users, or any combination thereof (see including, but are not limited to, col. 7, lines 1-col. 9, line 42).

Regarding claim 81, Gordon further discloses the second component is associated with a coefficient indicative of a weight associated with a particular second component (e.g. at particular location, assigning weighting factor of 1.0 for a movie and weighting factor of 0.1 for foster – col. 9, lines 25-43).

Regarding claim 83, Gordon further discloses the retention value comprises a third priority associated with the viewing asset (expiration time, date, popularity, etc.) and a fourth priority associated with the target video server (usage level of particular server, bandwidth available of the network connected to particular server, available space of storage device at particular server, etc. – col. 4, lines 60-67; col. 5, lines 40-63; col. 6, lines 5-55; col. 7, lines 42-67; col. 8, line 41-col. 9, line 43).

Regarding claims 84-85, the limitations that correspond to the limitations of claim 12 and additional limitations of claim 76, and are analyzed as discussed with respect to the rejection of claims 12 and 76.

Regarding claims 86-87, the limitations that correspond to the limitations of claim 70 and additional limitations of claim 76, and are analyzed as discussed with respect to the rejection of claims 70 and 76.

7. Claims 3, 8, 20-29, 35, 39, 47-50, 58, 62, 66 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon et al. (US 5,920,700) in view of Noritomi (US 6,473,902).

Regarding claim 3, Gordon further discloses deleting lower economic value assets (unused assets, assets with expired date, etc.) and adding/copying assets with higher

Art Unit: 2623

economic values (i.e. high demand/popular asset, new asset, etc.) – col. 8, line 41-col. 9, line 42). However, Gordon does not specifically disclose selecting a portion of the replica of one or more viewing assets in response to the portions of the replica of one or more viewing assets having a total data size of at least as large as a data size of the mission portion of the selected asset.

Noritomi teaches selecting a portion of the replica of one or more viewing assets in response to the replica of one or more viewing assets having a total data size at least as large as a data size of the missing portion of the selected asset (select deletion candidate to be deleted to free space that large enough to save new program- col. 11, line 50-col. 12, line 18 and figures 13-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gordon to use the teaching as taught by Noritomi in order to optimize storage space utilization such as copying entire asset into the storage or minimizing interruption of data.

Regarding claim 8, Gordon further assets with expired date is flag for deletion or unused asset is deleted– col. 7, lines 10-15; col. 8, lines 48-60). However, Gordon does not specifically disclose provide asset elements in one or more element deletion lists.

Noritomi teaches the portion of replica of one or more viewing assets consists of replicas of asset elements belonging to one or more element deletion lists (deletion candidate list – col. 10, line 50- col. 12, line 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gordon to

Art Unit: 2623

use the teaching as further taught by Noritomi in order to allow the user to easily manage the deletion of data.

Regarding claims 58, 66, 69 the additional limitations as claimed correspond to the additional limitations of claims 3, 8, 15 and are analyzed as discussed with respect to the rejection of claims 3, 8 and 15.

Regarding claim 20, the limitations that correspond to the limitations of claim 1 are analyzed as discussed with respect to the rejection of claim 1. Gordon further discloses providing permissive flag to assets to be deleted and providing deletion orders (col. 6, lines 10-15; col. 7, lines 10-15; col. 8, lines 40-67). However, Gordon does not specifically disclose constructing a table of element deletion lists for the target video storage; and selecting at least one of element deletion lists from the table, the selected element deletion list having a data size at least as large as a data size of a portion of a replica of another viewing asset not stored on the target video storage.

Noritomi teaches constructing a table of element deletion lists for the target video storage and selecting a group of element deletion lists from the table (construct a table of element deletion candidate lists and selecting a group of element from table of deletion candidate lists – col. 10, line 50- col. 12, line 11, figures 13-16). Noritomi further discloses selecting at least one of element to be deleted and the selected element deletion list having a total data size at least as large as a data size of the missing

Art Unit: 2623

portion of the selected asset (select deletion candidate to be deleted to free space that large enough to save new program- col. 11, line 50-col. 12, line 18 and figures 13-16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gordon to use the teaching as taught by Noritomi in order to easily manage the deletion of data and furthermore to optimize storage space utilization such as copying entire asset into the storage or minimizing interruption of data.

Regarding claim 21, the additional limitations as claimed correspond to the additional limitations as claimed in claim 2, and are analyzed as discussed with respect to the rejection of claim 2.

Regarding claim 22, Gordon in view of Noritomi discloses the process as discussed in the rejection of claim 20. Gordon further discloses the set of deletion with lower retention value than the propagation priority of the asset (assets with expired date/unused assets to be deleted has lower retention value (value associated with asset's useful life, popularity, bandwidth available, etc.) than the new asset/popular asset to be copied – 8, line 40-col. 9, line 43).

Regarding claim 23, Gordon in view of Noritomi discloses the process as discussed in the rejection of claim 22. Noritomi further discloses picking one of the lists having a data size at least as large as the portion of the replica on the asset (select deletion candidate

Art Unit: 2623

to be deleted to free space that large enough to save new program- col. 11, line 50-col. 12, line 18 and figures 13-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gordon to use the teaching as further taught by Noritomi in order to optimize storage space utilization such as copying entire asset into the storage or minimizing interruption of data.

Regarding claim 24, Gordon in view of Noritomi discloses the process as discussed in the rejection of claim 20. Noritomi further discloses deletion candidate is selected according to significant in the priority- and if the space area is not enough to save the copies, additional deletion is performed to free space for new data received from the main server (col. 10, line 40-col. 11, line 64). As a result, after copying, the data has priority next to the deleted data shift to the low priority level and will be added to deletion list if more space is required. Thus, the table of element deletion lists (file 124) is updated after copying the portion of the replica of the another asset. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gordon to use the teaching as further taught by Noritomi in order to improve efficiency in maintaining of data in storage device.

Regarding claim 25, the additional limitations as claimed correspond to the additional limitations as claimed in claim 11 and are analyzed as discussed with respect to the rejection of claim 11.

Art Unit: 2623

Regarding claim 26, the limitations that correspond to the limitations of claims 1, 5 are analyzed as discussed with respect to the rejection of claims 1, 5. For the limitation of "selecting a target video server", Gordon discloses selecting of a storage device of video server at particular location such as in New York, in Denver, etc. for targeting the asset according to user demand, space available of storage device, bandwidth available of the network at that location for copying the asset (col. 3, lines 20-67, col. 4, lines 59-67; col. 5, lines 40-63; col. 7, line 16-col. 9, line 43) read on "selecting a target video server".

Gordon further discloses deleting unused assets, asset with expired date from the storage device and copying new asset, asset with high demand, to the storage device (col. 8, line 40-col. 9, line 43). It is obvious that the retention value is assigned to the set of viewing asset stored on the target video server (storage device at particular local server), the retention value representing a predicted economic value of retaining the set of replicas on the target video server (e.g. retention value presenting a predicted economic value of retaining set of data on storage vice for unused/expired asset is low, and for overused/potential popular asset is higher); The retention value being predictive of an economic value of retaining the set of replicas (low priority asset/unused asset/asset with expired date of retaining (being predictive as low economic value since no one request for it) is not retained at the storage device of video server) in order to improve economic value for distributing/maintaining data at particular storage device. However, Gordon does not explicitly disclose the replicas occupying enough space to store one of the viewing.

Noritomi discloses the replicas occupying enough space to store the one of the one of the assets (col. 10, line 40-col. 12, line 18, figures 13-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gordon to use the teaching as taught by Noritomi in order to optimize storage space utilization such as copying entire asset into the storage or minimizing interruption of data.

Regarding claim 27, Gordon in view of Noritomi discloses the process as discussed in the rejection of claim 26. Gordon further discloses deleting unused asset/providing permissive flag for asset with expired date to be deleted from the storage device and copying/storing new asset into the storage device (col. 7, lines 1-15, col. 8, lines 40-col. 9, line 13). Inherently, copying of the assets includes searching for one or more set of replicas of asset elements to delete (e.g. searching for asset with expired date or unused assets) so that the asset with expired date or unused assets are identified.

Alternatively, Noritomi also discloses the controller 16 selects, as a "deletion candidate" a group of the video programs with are less significant in the priority. The deletion candidate is checked and listed in the space file 124 and then deleted – col. 10, line 50-col. 11, line 64). Necessarily, copying one of the assets includes searching for one or more sets of replicas of asset elements to delete (searching for deletion candidate) from a table of element deletion lists (file 124).

Art Unit: 2623

Regarding claim 28, Gordon in view of Noritomi teaches a process as discussed in the rejection of claim 26. Gordon further discloses updating the retention values in response to anticipated changes in viewer request levels for assets (i.e. assigning high retention value/asset useful life for popularity/new asset, or low retention value for unused assets, asset with expired date – col. 7, lines 10-15; col. 8, line 18-col. 9, line 43).

Regarding claim 29, the additional limitations that correspond to the additional limitations of claim 14 are analyzed as discussed with respect to the rejection of claim 14. Gordon further discloses copying the asset based on at least in part on accumulated data (i.e. popularity of the asset) and updating the data/all registers in response to the copying/deleting of assets (col. 6, line 15-col. 7, line 67). As a result, the retention value is updated based on at least in part on the accumulated data (for example, retention value is updated as high for high demand asset).

Regarding claims 35, 39, 47-50, the limitations as claimed are directed toward embodying the process of claims 3, 8, 20, 22-23, 25 respectively in “program storage media storing executable instructions”. It is obvious to one of ordinary skill in the art to embody the procedures discussed in claims 3, 8, 20, 22-23, 25 in order that the instructions could be automatically performed by a processor

Art Unit: 2623

Regarding claim 62, the additional limitations as claimed correspond to limitations of constructing a table... ; selecting a group... in claim 20, and are analyzed as discussed in the rejection of claim 20.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dodson et al. (US 5,220,516) discloses the use of data retention priority (col. 5, lines 14-44).

Dodson et al. (US 5,029,104) discloses prestaging objects in a distributed environment.

EP (0 649,121 A2) discloses digital information accessing, delivery, and reproducing.

Ueda et al. (US 6,339,786) discloses terminal device.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P. Huynh whose telephone number is 571-272-7295. The examiner can normally be reached on 9:00 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S. Kelley can be reached on 571-272-7331. The fax phone

Art Unit: 2623

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Son P. Huynh

December 25, 2006

A handwritten signature in black ink, appearing to read 'am2', followed by a long horizontal line.